

REMARKS

This paper is filed in response to the official action dated August 26, 2008 (hereafter, "the official action"). This paper is timely filed as it is accompanied by a petition for extension of time and authorization to charge our credit card account in the amount of the requisite fee. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed, or which should have been filed herewith, to our Deposit Account No. 13-2855, under Order No. 29610/CDT413.

By the foregoing, claim 1 has been amended to recite the limitation of claim 16, and claim 16 has been canceled without prejudice or disclaimer. No new matter has been added.

Claims 1-4, 11, 13, 14, 17-24, 26, 28, 29, and 35-39 have been rejected as assertedly anticipated by U.S. Patent 7,396,598 to Takeuchi et al. (Takeuchi). Claims 5-8, 16, 27, 30-32, 34, 40 have been rejected as assertedly obvious over Takeuchi alone, or in further view of U.S. Patent 6,416,915 to Kikuchi et al. (Kikuchi), U.S. Patent 4,834,505 to Migliorato et al. (Migliorato), and/or U.S. Patent 6,696,181 to Okunaka et al. (Okunaka).

Claims 1-5, 11, 13, 14, 16-21, 23, 24, 26, 28, 29, 34, 35, and 37-39 have been rejected as assertedly obvious over U.S. Patent No. 5,518,824 to Funhoff et al. (Funhoff) in view of Lamansky et al., Organic Electronics, 2(1):43-62 (2001) (Lamansky). Claims 6-8, 22, 27, 30-32, 36, 40 have been rejected as assertedly obvious over the combination of Funhoff and Lamansky in view of one or more of Migliorato, Okunaka, D'Andrade et al., Advanced Materials, 14(2):147-151 (Jan. 2002) (D'Andrade), and Kikuchi.

Claim Rejections – 35 U.S.C. §102

Claims 1-4, 11, 13, 14, 17-24, 26, 28, 29, and 35-39 have been rejected as assertedly anticipated by Takeuchi. The applicants respectfully traverse the rejections.

Takeuchi fails to disclose a mixture of a polymerizable compound and a phosphorescent material according to the pending claims. Rather, Takeuchi discloses various light-emitting complexes which include a polymerizable substituent or ligand. As a result, Takeuchi forms a polymer containing the light-emitting complex therein

and not a mixture of two separate components, as claimed. For example, the electron transport materials mentioned at column 85, line 46 – column 86, line 23 and referenced by the examiner at page 3 of the action are polymerizable and thus would form a copolymer when reacted with the light-emitting complexes containing the polymerizable substituent or ligand. *See also* Takeuchi at column 59, line 53 through column 60, line 3.

Additionally, Takeuchi fails to disclose a mixture comprising a polymerizable compound comprising an organic charge transporting fragment and a phosphorescent compound wherein the phosphorescent material is present in the mixture at a concentration in the range of from 0.5 molar % to 15 molar %, as claimed. The application discloses that if the concentration of the emissive species is too high, then quenching of luminescence can occur. *See* the present application at the third full paragraph of page 8.

Moreover, the examiner appears to have asserted that the exemplified iridium complexes shown at columns 113 and 114 correspond to the claimed phosphorescent material and the claimed organic charge transporting fragment, respectively. The applicants respectfully submit that both of these exemplified phenyl pyridine iridium complexes correspond to phosphorescent emitters (*see* the present application at page 8; *see also* Takeuchi at column 107, lines 50-57); neither corresponds to an organic charge transporting fragment, as claimed. It is not clear what basis the examiner has for asserting that the either of these iridium complexes comprise a charge transporting fragment, as claimed.

Therefore, the anticipation rejections over Takeuchi are improper and should be withdrawn.

Claim Rejections – 35 U.S.C. §103

(1) Rejections over Takeuchi

Claims 5-8, 16, 27, 30-32, 34, 40 have been rejected as assertedly obvious over Takeuchi alone, or in further view of Kikuchi, Migliorato, and/or Okunaka. The applicants respectfully traverse the rejections.

Takeuchi fails to provide any suggestion or motivation to modify the polymerizable composition disclosed therein to provide a mixture of a polymerizable

compound and a phosphorescent material, as claimed. The other cited documents are similarly deficient.

Moreover, Takeuchi fails to disclose or suggest a mixture comprising a polymerizable compound comprising an organic charge transporting fragment (or for that matter, any organic charge transporting fragment) and a phosphorescent material wherein the phosphorescent material is present in the mixture at a concentration in the range of from 0.5 molar % to 15 molar %, as claimed.

None of the other cited documents remedy the foregoing deficiencies.

(2) Rejections over Funhoff

All pending claims 1-8, 11, 13, 14, 16-24, 26-32, and 34-40 have also been rejected as variously obvious over Funhoff and Lamansky et al. in view of one or more of Migliorato, Okunaka, D'Andrade, and Kikuchi.

Funhoff discloses a forming an OLED using a cross-linkable charge transport compound. Funhoff further discloses that charge transport compounds “expressly include those compounds which are components of the emitter layer, i.e. photoluminescent materials, such as fluorescent dyes.” *See* Funhoff at column 1, lines 55-60. Funhoff does not disclose or suggest a combination comprising the cross-linkable charge transport compound and a phosphorescent material, as claimed.

Furthermore, Funhoff does not contemplate combining a photoluminescent material and a charge transport compound, as claimed. Funhoff merely suggests that the principle of cross-linking charge transport materials could be extended to photoluminescent materials carrying groups capable of polymerization. *See* Funhoff at column 3, line 18 through column 4, line 6. Thus, Funhoff considers emissive photoluminescent materials and hole and/or electron transporting materials to be essentially equivalent but exclusive species for use in the methods disclosed therein. In support of this assertion, the applicants note that Funhoff fails to disclose a specific combination of any two of such “photoluminescent materials” (as that term is used in Funhoff).

Moreover, the EL device results reported in Funhoff are very poor – as they give light emission at 81 V and 91 V, respectively, both of which are entirely unacceptable operating voltages for OLED's. *See the* present application at paragraph

bridging pages 2-3. Thus, one of ordinary skill in the art would not consider Funhoff to be a promising starting point, and would not have the requisite expectation of success in combining a polymerizable compound comprising an organic charge transporting fragment and a phosphorescent material.

In fact, the applicants respectfully submit that *the present application explicitly discloses* it was not known at the time of invention whether phosphorescent materials would be stable to the photo-polymerization of materials such as those exemplified in Funhoff. *See* the present application at paragraph bridging pages 10-11. Additionally, *the present application discloses* that photo-polymerized cross-linked systems with fluorescent dopants demonstrate poor performance. *See* present application at paragraph bridging pages 10-11.

Lamansky discloses a composition comprising a (preformed) polymer and a phosphorescent material. Lamansky does not disclose a polymerizable compound in combination with a phosphorescent material, as claimed. Thus, Lamansky would not be expected to have the stability problems and performance issues mentioned above, and cannot provide the requisite motivation to overcome the knowledge in the art that these issues negatively effected any chances for success in adapting its system to include a polymerizable compound rather than a pre-formed polymer. Thus, one of ordinary skill in the art would not have had a reasonable expectation of success to combine a polymerizable compound and a phosphorescent material, as claimed.

The other documents cited by the examiner do not remedy the foregoing deficiencies.

In view of the foregoing, it is respectfully submitted that a *prima facie* case of obviousness cannot be sustained. Accordingly, the rejections of record should be withdrawn.

CONCLUSION

It is submitted that the application is in condition for allowance. Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, the examiner is respectfully invited to contact the undersigned attorney at the indicated telephone number.

Respectfully submitted,

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